

REMARKS/ARGUMENTS

This Amendment is being filed in response to the Office Action dated July 8, 2010. Reconsideration and allowance of the application in view of the amendments made above and the remarks to follow are respectfully requested.

Claims 1-10 are pending in the Application. Claims 1 and 10 are independent claims.

In the Office Action, claims 1-10 are rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,468,265 to Evans et al. ("Evans") in view of U.S. Patent Publication No. 2005/0020911 to Viswanathan et al. ("Viswanathan") or U.S. Patent No. 6,711,429 to Gilboa et al. ("Gilboa"). These rejections are respectfully traversed. It is respectfully submitted that claims 1-10 are allowable over Evans in view of Viswanathan or Gilboa for at least the following reasons.

Independent claims are amended to clarify its recitations. For example, claim 1 recites navigating an instrument in a body volume that is subject to a spontaneous movement caused by heartbeats and respiration. It further recites "obtaining a location of the instrument, the instrument providing interpolation nodes"; "measuring a movement parameter describing the spontaneous movement of the body volume"; "a movement model that describes, with respect to at least one reference phase of the heartbeat, a spontaneous movement field or vectorial displacement to which interpolation nodes of the body volume are subject during the at least one reference phase"; "using the movement model, the location and the movement parameter to calculate an estimated movement-

compensated location corresponding to the location and the vectorial displacement of the instrument during the at least one reference phase.

In rejecting claim 1, the Office Action cites Evans, col. 22, lines 18-15 as teaching sensing devices for detecting the position and orientation of the targets, cites col. 27, lines 33-40 as teaching deriving correlation between the ECG trace 502 and the displacement motion trace 501, and cites col. 27, lines 45-48 for predicting displacement. The Examiner then admits that the "calculating element" is missing from Evans.

In response, it is noted that there is no mention in Evans of "measuring a movement parameter describing the spontaneous movement of the body volume" where the spontaneous movement is "caused by heartbeats and respiration". Evans fails to disclose a "movement model that describes, with respect to at least one reference phase of the heartbeat, a spontaneous movement field or vectorial displacement to which interpolation nodes of the body volume are subject during the at least one reference phase" that are caused by heartbeats and respiration as recited in the claim.

Importantly, any mention of a movement model describing the spontaneous movement of the body volume caused by heartbeats and respiration is missing from Evans.

Viswanathan and Gilboa are cited for showing other elements of the claims and do not remedy the deficiencies of Evans.

It is respectfully submitted that claim 1 is not anticipated or made obvious by the teachings of Evans, Viswanathan, and Gilboa. For example, Evans, Viswanathan, and Gilboa do not teach disclose or suggest, amongst other patentable elements, a (illustrative emphasis added) "device for navigating an instrument in a body volume that is subject to a

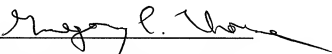
spontaneous movement caused by heartbeats and respiration, the device comprising: a locating device for obtaining a location of the instrument, the instrument providing interpolation nodes; a sensor for measuring a movement parameter describing the spontaneous movement of the body volume; a movement model that describes, with respect to at least one reference phase of the heartbeat, a spontaneous movement field or vectorial displacement to which interpolation nodes of the body volume are subject during the at least one reference phase; and a data processing device coupled to the locating device and the sensor for using the movement model, the location and the movement parameter to calculate an estimated movement-compensated location corresponding to the location and the vectorial displacement of the instrument during the at least one reference phase" as recited in claim 1 and as similarly recited in claim 10. It is clear that the prior art does not calculate an estimated movement-compensated location due to movement caused by heartbeats and respiration and as such, it clearly does not calculate an estimated movement-compensated location during the at least one reference phase of the heartbeat.

Based on the foregoing, the Applicants respectfully submit that independent claims 1 and 10 are patentable and notice to this effect is earnestly solicited. Claims 2-9 respectively depend from independent claim 1 and accordingly are allowable for at least this reason as well as for the separately patentable elements contained in each of the claims. Accordingly, separate consideration of each of the dependent claims is respectfully requested.

In addition, Applicants deny any statement, position or averment of the Examiner that is not specifically addressed by the foregoing argument and response. Any rejections and/or points of argument not addressed would appear to be moot in view of the presented remarks. However, the Applicants reserve the right to submit further arguments in support of the above stated position, should that become necessary. No arguments are waived and none of the Examiner's statements are conceded.

Applicants have made a diligent and sincere effort to place this application in condition for immediate allowance and notice to this effect is earnestly solicited.

Respectfully submitted,

By 

Gregory L. Thorne, Reg. 39,398
Attorney for Applicants
September 22, 2010

THORNE & HALAJIAN, LLP
Applied Technology Center
111 West Main Street
Bay Shore, NY 11706
Tel: (631) 665-5139
Fax: (631) 665-5101